



Displays

GDR 15L Series

15.1" Flat-Panel TFT LCD Display

GDR 15L: 15.1" Rugged Desktop LCD Monitor

GDR 15L-TR: GDR 15L with Resistive Touchscreen

USER'S MANUAL

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1. Introduction

Thank you for purchasing the GDR 15L rugged TFT display.

The GDR 15L range of products have been designed to provide the highest possible image quality, in a rugged housing that has specifically been manufactured to operate in environments that would normally be considered too harsh for normal computer equipment .

What makes the GDR 15L different?

The GDR 15L is a high quality, Ultra-Bright TFT LCD display with a resolution of 1024x768. Sleek yet solid, our GDR Series displays feature a two-piece cast aluminum shell with low-profile rubber buttons, designed to withstand the shock and vibration of industrial and vehicle use. The screen is crisp, flicker-free, and brilliant

This well-thought out design is NEMA 12 dust and moisture resistant, with elastomer-sealed OSD geometry controls on the front panel for convenient screen image control. Locking power and signal connectors help prevent accidental disconnection.

The GDR 15L has been rigorously tested to withstand severe shock and continual vibration and features a panel protected by 3mm toughened glass. Each display has a guaranteed 24-hour burn prior to shipping.



2. Unpacking

Along with the GDR 15L rugged TFT, each box should contain the following:

1. Universal AC/DC Power Supply
2. 2-meter VGA Connector Cable
3. 3-pin IEC Power Lead
4. 9-pin Serial Connector Cable
5. Touch Drivers CD-ROM (GDR 15L-TR touchscreen model)
6. User's Manual

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If any of these items are not included, please contact CyberResearch. In the unlikely event of product failure, please retain the original packaging so that the units may be safely returned to us for service.

Important Note: Do not use any other power supply, other than the one shipped with the unit. This may cause irreparable damage to either the panel or the electronics, and will in all cases invalidate the warranty.

It is recommended that the display be used only in conjunction with the VGA cable supplied. Deterioration in picture quality may occur if a poorly shielded cable, or a longer cable is used in its place.



3. Connection to the Computer

GDR 15L Model

Using the following simple instructions, the GDR 15L will be installed and configured within about five minutes.

On the bottom of the GDR 15L, there are two ports—a 15-pin VGA port, and a power jack. One end of the VGA cable will already be connected to the VGA port when the unit is shipped.

- 3.1 Turn off the computer.
- 3.2 Attach the VGA cable to the video port on the PC and ensure that both thumbscrew connections are securely fastened.
- 3.3 Insert the power jack on the power supply into the remaining circular port on the monitor, and connect the power supply to an outlet using the IEC power lead.
- 3.4 Turn on the computer.
- 3.5 Turn on the display.
- 3.6 The display has not yet been configured, so the picture quality may not yet be optimized.

GDR 15L-TR Touchscreen Model

In addition to the above, the touchscreen model has an extra cable terminating in a 9-pin serial connector which connects to one of the PC's serial ports.



Power, VGA, & Touchscreen connectors on bottom of unit.

4. Image Control and Adjustment

There are two important steps in order to ensure that the best possible image quality is now obtained:

4.1 Select the correct resolution and refresh rate.

The GDR 15L is intended to run at a resolution of 1024x768 pixels. Although the unit can display in full screen mode at both 800x600 and 640x480, we strongly recommend you now set the resolution to 1024x768.

- Move the slider bar until the screen resolution is **1024x768**.
- Change the refresh rate to **60 Hz**
- Set the number of colors to 16 million
- Save settings before exiting.

4.2 Run the On-Screen Auto Adjust Utility using the buttons on the front of the monitor:

- Click the “Menu” Button once. The On-Screen Menu will now pop up and will already be highlighting the “Auto Adjust” option.
- Click “Select.”
- The display will now resize and reposition until an optimal image is achieved.
- Wait five seconds and the On-Screen Controls will disappear.

Important Note: The panel used in the GDR 15L can operate between a range of 60 and 75 Hz. The best frequency will depend on the driver card in the PC. If at this stage there is any “noise” on the screen, we recommend the following:

- Try increasing the refresh rate above 60 Hz. **Do not exceed 75 Hz.**
- Fine-tune the Brightness, Contrast and Sharpness functions using the On-Screen Control.

4.3 The GDR 15L is an extremely bright display, operating at 400 nits (400 cd/m²). We strongly recommend that, unless the unit is used in very bright lighting conditions, the brightness be reduced to around 60 to 70% using the On-Screen Control. This helps to eliminate any residual screen noise, and also will greatly prolong the backlight life of the panel.

4.4 Changing the screen resolution:

The GDR 15L can operate in full screen at either SVGA (800x600) or VGA (640x480) .The unit cannot operate at any resolution higher than 1024x768.

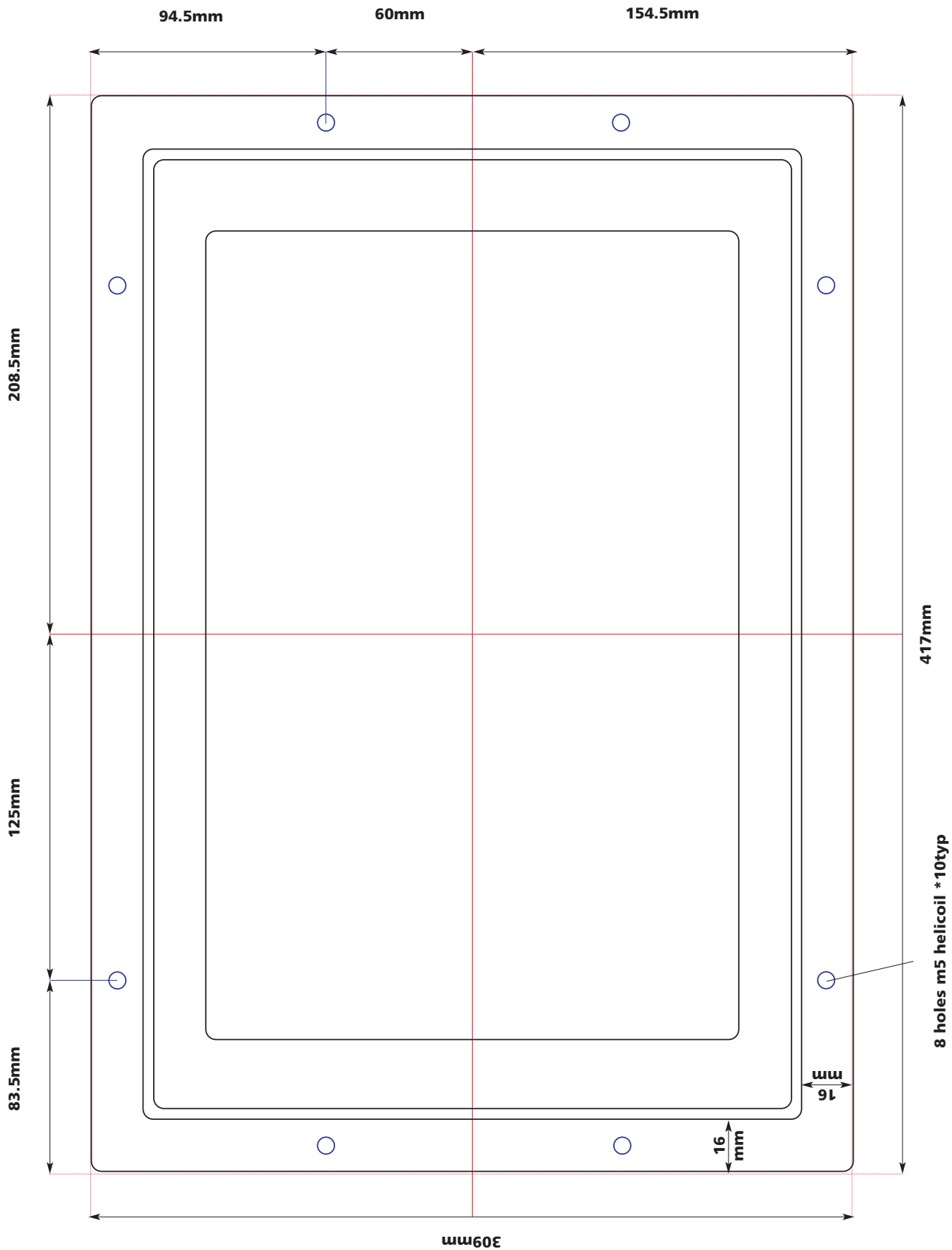
In order to step down resolution, simply select the “Display” icon in the Control Panel, chose “Settings,” and move the slider bar to the desired position.

Note: When changing resolutions it may be necessary to run the On-Screen Auto Adjust utility in the new resolution in order to maximize image quality.

Whenever the display is being used at 800x600 the image quality will never be as crisp and clear as when it is operating at its preferred resolution of 1024x768. This is particularly noticeable when viewing text, especially small fonts. This is a due to the monitor “doubling” some pixels in order to fill the screen and is completely normal.

Display		
Display Type		LCD flat panel
Video Input Types		Standard analog VGA (15-pin)
Screen Size (viewable area, diagonal)		15.1"
Display Filter Screen Size		06" to 15" 15" to 18"
Display Brightness		250 nits (High-Bright)
Display Filter Brightness		High-bright (250 to 340 nits)
Resolution, max.		1024 x 768 pixels
Screen Protection		Tempered glass Anti-reflective coating
Maximum Number of Colors		16 million colors
Maximum Color Depth in Bits		24-bit color
Contrast Ratio		300:1
Viewing Angle	° Horizontal	160°
	° Vertical	110°
Response Rate	Rise	60ms
	Decay	50ms
Chassis		
Mounting Configuration		Desktop / benchtop Swivel-arm mount Weighted desktop stand
Protection Rating		NEMA 12 IP52 (most dust, falling water within 15 deg. of vertical)
Display Filter Protection		Water-Resistant (NEMA 4/12, IP65)
Front Panel Material		Die-cast metal
Chassis Material		Die-cast metal
Custom Color Options		Custom color available (min. qty: 100)
Mounting		
VESA Mounting Hole Pattern		75x75mm VESA mounting holes
Stand Features		See optional mounting stands, brackets, and swivel arms below.
Touchscreen		
Touchscreen Type		Resistive touchscreen
Touchscreen Interface		RS-232 serial
Light Transmittance of Touchscreen		75%
Touchscreen Quantity of Wires		5-wire
Touchscreen Manufacturer		ELO
Touchscreen Resolution		1024 x 1024 points
Indicators, Switches, & Controls		
On Screen Display (OSD) Control Functions		Brightness Contrast Sharpness Auto adjustment
Front Panel Controls	Power On/Off Switch	1 on/off switch
	OSD Controls	Sealed OSD controls for menu navigation (4 rubber keys)
Signal Connectors		
Video Input Connectors		HD15 (standard VGA) connector
Touchscreen Connector		9-pin D-sub female
Cables		
Video Cable Length (included)		6 feet
Pointing Device Cable Length (included)		6ft (1.83m)
Cabling Details		A 6-foot male-male VGA cable is included with all models. Touchscreen models include a 6-foot DB-9 M-F touchscreen cable.

Power Supply	
Power Supply Form Factor	External (fully enclosed)
Nominal Input Voltage(s)	110/220VAC
Input Voltage Range(s)	100...240VAC
Input Frequency	50/60Hz
Power Supply Input Connector	NEMA standard male PC cord socket
Output Voltage(s)	+12VDC
DC Input Power Info	
DC Input Voltage(s)	+12VDC
Cooling	
Cooling Summary	Convection (runs in silence)
Environmental Specifications	
Operating Temperature	32°F....122°F (0°C....50°C)
Storage Temperature	-13°F....140°F (-25°C....60°C)
Relative Humidity, noncondensing	5%....95%
Shock Resistance	Operating 18g half-sine for 6ms, 500 bumps per axis in each direction (total: 3000), operating.
Vibration Resistance	Operating 5 to 150Hz, 1.0g peak-to-peak for 2 hours per axis, operating.
Safety & Standards Compliance	
Safety/Approvals	Meets EMC Directive 89/336/EEC
MTBF (average) -- Display Backlight	40000 hours
Dimensions	
Width	15.24" (387mm)
Height	10.98" (279mm)
Depth (including handles)	2.44" (62mm)
Weight	
Weight	9.9lbs (4.49kg)
Display Filter Weight	Under 16 lbs.



NOT TO SCALE

6. Cleaning & Maintenance

The viewing surface should be cleaned with a suitable general purpose anti-static wipe. **Never use industrial cleaners or solvents**, as there are special coatings on the viewing surface that could be damaged.

7. Service and Support

If you are not completely satisfied with your GDR 15L, simply call our toll-free hotline (1-800-341-2525) within 30 days of receiving the item. A friendly customer service technician will arrange for a full refund, replacement, exchange, or credit.

If you have any questions about your GDR 15L, call our toll-free number in the USA (1-800-341-2525), call worldwide (203-483-8815), send a fax to (203-483-9024), or email our applications engineers at techsupport@cyber-research.com.

Product Service

Diagnosis and Debug

CyberResearch, Inc. maintains technical support lines staffed by experienced Applications Engineers and Technicians. There is no charge to call and we will return your call promptly if it is received while our lines are busy. Most problems encountered with data acquisition products can be solved over the phone. Signal connections and programming are the two most common sources of difficulty. CyberResearch support personnel can help you solve these problems, especially if you are prepared for the call.

To ensure your call's overall success and expediency:

- 1) Have the phone close to the PC so you can conveniently and quickly take action that the Applications Engineer might suggest.
- 2) Be prepared to open your PC, remove boards, report back-switch or jumper settings, and possibly change settings before reinstalling the modules.
- 3) Have a volt meter handy to take measurements of the signals you are trying to measure as well as the signals on the board, module, or power supply.
- 4) Isolate problem areas that are not working as you expected.
- 5) Have the source code to the program you are having trouble with available so that preceding and prerequisite modes can be referenced and discussed.
- 6) Have the manual at hand. Also have the product's utility disks and any other relevant disks nearby so programs and version numbers can be checked.

Preparation will facilitate the diagnosis procedure, save you time, and avoid repeated calls. Here are a few preliminary actions you can take before you call which may solve some of the more common problems:

- 1) Check the PC-bus power and any power supply signals.
- 2) Check the voltage level of the signal between SIGNAL HIGH and SIGNAL LOW, or SIGNAL+ and SIGNAL-. It CANNOT exceed the full scale range of the board.
- 3) Check the other boards in your PC or modules on the network for address and interrupt conflicts.
- 4) Refer to the example programs as a baseline for comparing code.

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Warranty Notice

CyberResearch, Inc. warrants that this equipment as furnished will be free from defects in material and workmanship for a period of one year from the confirmed date of purchase by the original buyer and that upon written notice of any such defect, CyberResearch, Inc. will, at its option, repair or replace the defective item under the terms of this warranty, subject to the provisions and specific exclusions listed herein.

This warranty shall not apply to equipment that has been previously repaired or altered outside our plant in any way which may, in the judgment of the manufacturer, affect its reliability. Nor will it apply if the equipment has been used in a manner exceeding or inconsistent with its specifications or if the serial number has been removed.

CyberResearch, Inc. does not assume any liability for consequential damages as a result from our products uses, and in any event our liability shall not exceed the original selling price of the equipment.

The equipment warranty shall constitute the sole and exclusive remedy of any Buyer of Seller equipment and the sole and exclusive liability of the Seller, its successors or assigns, in connection with equipment purchased and in lieu of all other warranties expressed implied or statutory, including, but not limited to, any implied warranty of merchant ability or fitness and all other obligations or liabilities of seller, its successors or assigns.

The equipment must be returned postage prepaid. Package it securely and insure it. You will be charged for parts and labor if the warranty period has expired.

Returns and RMAs

If a CyberResearch product has been diagnosed as being non-functional, is visibly damaged, or must be returned for any other reason, please call for an assigned RMA number. The RMA number is a key piece of information that lets us track and process returned merchandise with the fastest possible turnaround time.

PLEASE CALL FOR AN RMA NUMBER!

Packages returned without an RMA number will be refused!

In most cases, a returned package will be refused at the receiving dock if its contents are not known. The RMA number allows us to reference the history of returned products and determine if they are meeting your application's requirements. When you call customer service for your RMA number, you will be asked to provide information about the product you are returning, your address, and a contact person at your organization.

Please make sure that the RMA number is prominently displayed on the outside of the box.

• Thank You •

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